Progress Report: Data Collection and Analysis Report and Revised Problem Hypothesis

Date: **May 2006**

Listed Waterbody: **Lompico Creek**

Listed Condition: **Pathogens**

Designated Beneficial Uses: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Ground Water Recharge (GWR), Contact and Non-contact Recreation (REC-1 and REC-2), Wildlife Habitat (WILD), Cold Freshwater Habitat (COLD), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), and Commercial and Sport Fishing (COMM)

Watershed Location: Santa Cruz County. Flows into Zayante Creek. Zayante Creek then flows into the San Lorenzo River

Year added to California's CWA Section 303(d) List of Impaired Waters - 1994

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Basis for listing: Lompico Creek was listed for pathogens in 1994. The exact data and/or reports used to list this waterbody are unknown, however, data taken by the County of Santa Cruz from 1985 to 1994 do show exceedences of the Basin Plan's bacterial water quality objective[1] for contact recreation (see Appendix 1).

Data Collection and Analysis:

Analysis of data from March 2005 – Jan. 2006: The County of Santa Cruz continues to take monthly samples in Lompico Creek. Upon reviewing the most recent year of data, March 2005 – Jan. 2006, only 2 months out of 11 exceeded 400 MPN. The two months that did exceed the water quality objective were above it by a very small amount (455 MPN/100 mL in Jan. 2006 and 600 MPN/100 mL in Oct. 2005). Since we only have monthly sampling, we cannot compare the samples within a 30-day period. However, if we evaluate the data over the 11-month period, 2/11 samples exceed the 400 MPN, which is 18% of the samples. This exceeds the 10% of samples allowed to exceed the 400 MPN, but the concentrations that exceed the 400 MPN are so low, staff concludes this is not very problematic.

Analysis of data from Jan. 2004 – Feb. 2005: Only 1 month out of 12 exceeded 400 MPN (see Figure 1). The one-month that did exceed the water quality objective was above it by a very small amount (910 MPN/100 mL in September 2004). If we evaluate the data over the period of a year, 1/12 of the samples exceeded 400 MPN, which is only 8% of the samples. Therefore, we can argue that Lompico Creek did not exceed the water quality objective, because less than 10% of the samples exceeded 400 MPN from Feb. 2004 – Feb. 2005.

[1] REC-1:"Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml."

Past analysis (1995 – 2003):
Lompico Creek occasionally exceeded the Basin Plan's bacterial water quality objectives for contact recreation (Figure 2) from 1995 to January 2004.

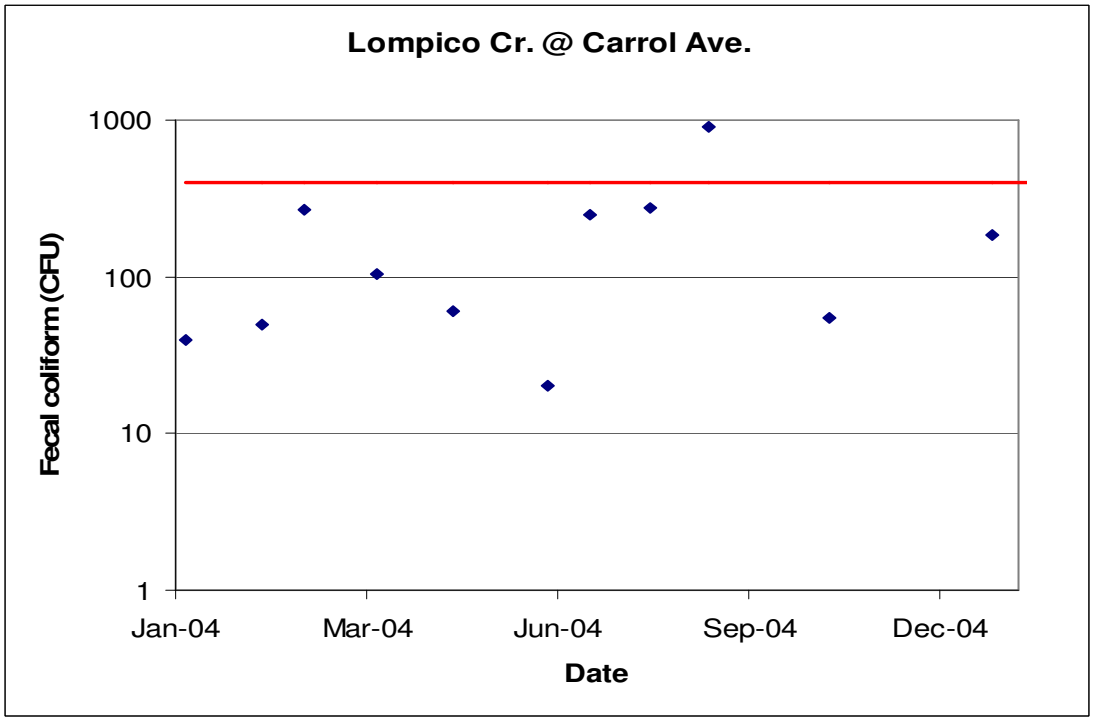

Figure 1: Fecal coliform concentration (CFU) of sampling site "Lompico Creek at Carrol Avenue" from Feb. 2004 to Feb. 2005

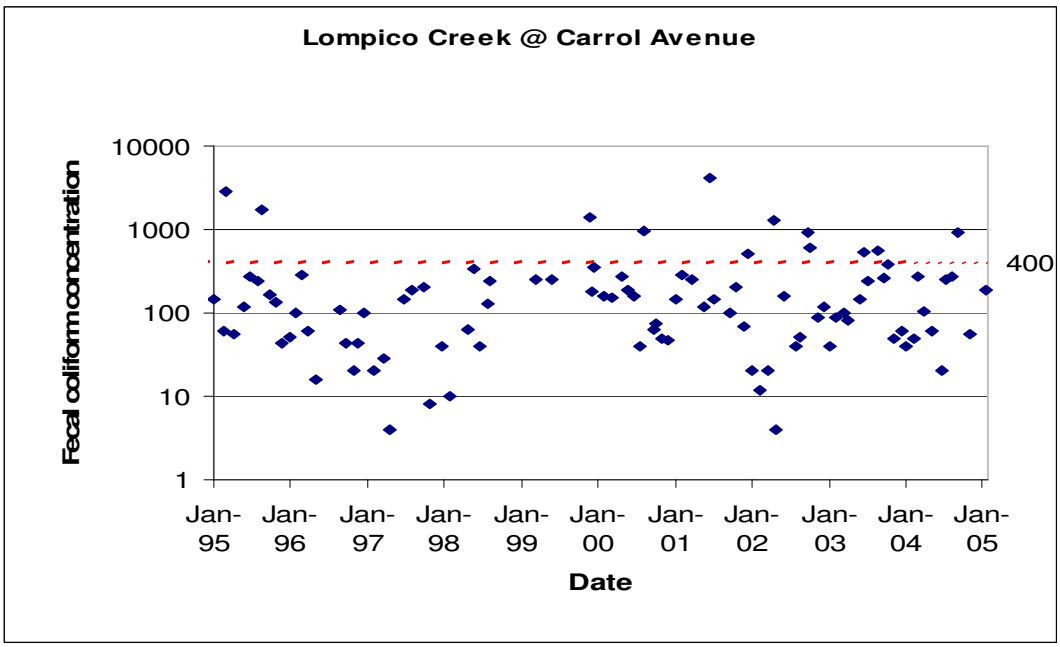

Figure 2: Fecal coliform concentration (CFU) of sampling site "Lompico Creek at Carrol Avenue" from 1985 – 2005.

Revised Problem Hypothesis: Lompico Creek rarely exceeds water quality objectives for REC-1 and when it does, the concentrations are only slightly above the 400 MPN/100 mL objective. Since Lompico Creek has rarely exceeded bacterial water quality objectives in the last 11 years (1995 – 2006) and did not exceed bacterial water quality objectives between Feb. 2004 and Feb. 2005, staff offers the following recommendation:

- **Lompico Creek should be designated a low priority. Request data from Santa Cruz from Feb. 2006 – Feb. 2007 and see what the data shows.**

It would be nice to delist this waterbody for pathogens. However, since the most recent sampling (March 2005 – Jan. 2006) indicated that 2/11(18%) samples exceeded the water quality objective for bacteria, it would be difficult to delist, even though the exceeding concentrations are so low. If concentrations of bacteria continue to exceed water quality objectives in the next couple of years (2006-2008 or 2009), we will reconsider investigating sources and correcting impairment if necessary.